

What is claimed is:

1. A signal processing apparatus, comprising:
a radio radar unit emitting/receiving radio
5 waves in different directions;
a parameter extraction unit extracting a
plurality of parameters relating to desensitization
from received radio waves obtained from different
directions; and
10 a determination unit determining whether or
not received power of received waves indicates
desensitization of radio radar using a threshold
not constant at least for one parameter in a
multidimensional space representing the plurality
15 of parameters using coordinate axes.
2. The apparatus according to claim 1, wherein
said parameter is an average of a normalized
reception value of an object in a FM-CW mode.
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3. The apparatus according to claim 1, wherein
said parameter is an average received power
value for a velocity of a vehicle of an observer in
a CW mode in all directions and a difference
25 between a maximum value and a minimum value of a

received power value in each direction.

4. The apparatus according to claim 1, wherein
said parameter is an average received power
5 value for a velocity of a vehicle of the apparatus
in a CW mode in all directions and a standard
deviation or a variance of received power in each
direction.
- 10 5. The apparatus according to claim 1, wherein
said parameter is an average received power
value for a velocity of a vehicle of an observer in
a CW mode in all directions and a coefficient value
of an approximate curve of a distribution along a
15 direction of an average received power value in
each direction.
6. The apparatus according to claim 1, wherein
said radio radar has a CW mode using radio
20 waves of continuous waves and an FM-CW mode using
frequency modulated radio waves.
7. The apparatus according to claim 6, wherein
a received power value obtained by a radio
25 radar in the FM-CW mode is normalized into a

received power value when a mobile object is within a predetermined distance.

8. The apparatus according to claim 7, wherein
5 an estimated total number of mobile objects captured by a radio radar is computed by performing slice processing on the normalized and received power value, and it is determined that desensitization of the radio radar is detected when
10 the estimated total number of the mobile objects equals or exceeds a predetermined value.

9. The apparatus according to claim 8, wherein
it is determined that desensitization is
15 detected when a distance between a maximum value and a minimum value of the normalized and received power value is equal to or smaller than a predetermined value.

20 10. The apparatus according to claim 6, wherein
it is determined whether or not desensitization is detected using a parameter obtained in a CW mode and a parameter obtained in an FM-CW mode, and it is determined that
25 desensitization of the radio radar is detected when

desensitization is detected in both modes.

11. The apparatus according to claim 1, wherein
said determination unit comprises a first
5 counter for counting a value each time it is
determined that desensitization is detected, and a
second counter for counting a value each time it is
determined that desensitization is not detected,
and it is determined that desensitization is
10 detected when the first counter exceeds a
predetermined value.

12. The apparatus according to claim 11, wherein
at least a first and a second threshold are
15 used in determining that desensitization is
detected, and counting step values of the second
and first counters are increased respectively when
an average received power value is larger than the
first threshold and the average received power
20 value is smaller than the second threshold.

13. A signal processing method, comprising:
emitting/receiving radio waves using radio
radar in different directions;
25 extracting a plurality of parameters relating

to desensitization from received radio waves obtained from different directions; and

determining whether or not received power of received waves indicates desensitization of radio radar using a threshold not constant at least for
5 one parameter in a multidimensional space representing the plurality of parameters using coordinate axes.

10 14. The method according to claim 13, wherein
said parameter is an average of a normalized reception value of an object in a FM-CW mode.

15 15. The method according to claim 13, wherein
said parameter is an average received power value for a velocity of a vehicle of the apparatus in a CW mode in all directions and a difference between a maximum value and a minimum value of a received power value in each direction.

20 16. The method according to claim 13, wherein
said parameter is an average received power value for a velocity of a vehicle of an observer in a CW mode in all directions and a standard
25 deviation or a variance of received power in each

direction.

17. The method according to claim 13, wherein
said parameter is an average received power
5 value for a velocity of a vehicle of an observer in
a CW mode in all directions and a coefficient value
of an approximate curve of a distribution along a
direction of an average received power value in
each direction.

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18. The method according to claim 13, wherein
said radio radar has a CW mode using radio
waves of continuous waves and an FM-CW mode using
frequency modulated radio waves.

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19. The method according to claim 18, wherein
a received power value obtained by a radio
radar in the FM-CW mode is normalized into a
received power value when a mobile object is within
20 a predetermined distance.

20. The method according to claim 19, wherein
an estimated total number of mobile objects
captured by a radio radar is computed by performing
25 slice processing on the normalized and received

power value, and it is determined that desensitization of the radio radar is detected when the estimated total number of the mobile objects equals or exceeds a predetermined value.

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21. The method according to claim 20, wherein it is determined that desensitization is detected when a distance between a maximum value and a minimum value of the normalized and received power value is equal to or smaller than a predetermined value.

22. The method according to claim 18, wherein it is determined whether or not desensitization is detected using a parameter obtained in a CW mode and a parameter obtained in an FM-CW mode, and it is determined that desensitization of the radio radar is detected when desensitization is detected in both modes.

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23. The method according to claim 13, wherein in said determination step, a first counter value for use in counting a value each time is used to determine that desensitization is detected, and a second counter value for use in counting a value

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each time is used to determine that desensitization is not detected, and it is determined that desensitization is detected when the first counter exceeds a predetermined value.

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24. The method according to claim 23, wherein at least a first and a second threshold are used in determining that desensitization is detected, and counting step values of the second and first counters are increased respectively when
10 an average received power value is larger than the first threshold and the average received power value is smaller than the second threshold.

15 25. A program used to direct a computer to execute a process comprising:

emitting/receiving radio waves using radio radar in different directions;

extracting a plurality of parameters relating
20 to desensitization from received radio waves obtained from different directions; and

determining whether or not received power of received waves indicates desensitization of radio radar using a threshold not constant at least for
25 one parameter in a multidimensional space

representing the plurality of parameters using coordinate axes.